

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 Claim 1 (currently amended): An apparatus for printing a
2 fluid material by means of a continuous jet printing
3 technique, comprising a reservoir for storing the material,
4 a channel connected with the reservoir, which is provided
5 with at least one outflow opening from which, in use, flows
6 a jet of the material breaking up into drops, and a
7 pressure regulating mechanism for varying the pressure of
8 the material upstream of the outflow opening for the
9 purpose of obtaining the jet breaking up into drops, the
10 apparatus being further provided with pressure generating
11 means for passing the material under a predetermined
12 pressure through the channel in the direction of the
13 outflow opening, characterized in that the pressure
14 generating means are arranged for applying the
15 predetermined pressure to the material in the channel
16 hydraulically and/or pneumatically;
17 wherein the pressure regulating mechanism
18 comprises a movable control pin, which control pin can be
19 moved in a longitudinal direction towards/away from the
20 outflow opening; and

21 wherein an end of the control pin can be placed
22 at a predetermined distance of 15-500 μ m from the outflow
23 opening, for varying the pressure adjacent the outflow
24 opening by means of vibration of the control pin.

1 Claim 2 (original): An apparatus according to claim 1,
2 characterized in that the pressure generating means
3 comprise a gas source coupled to the reservoir and/or the
4 channel via a gas connection.

1 Claim 3 (original): An apparatus according to claim 2,
2 characterized in that the gas source comprises a gas
3 bottle.

1 Claim 4 (original): An apparatus according to claim 3,
2 characterized in that the apparatus is further provided
3 with a plunger pump connected to the gas bottle via a gas
4 connection with a cock, for pressurizing the gas bottle,
5 and that the gas bottle is connected to the reservoir
6 and/or the channel via a cock.

1 Claim 5 (original): An apparatus according to claim 4,
2 characterized in that the gas source comprises a second gas
3 bottle coupled to the reservoir and/or the channel via a
4 gas connection with a cock.

1 Claim 6 (previously presented): An apparatus according to
2 claim 1, characterized in that the predetermined pressure
3 is a pressure between 15 and 600 bars.

1 Claim 7 (original): An apparatus according to claim 6,
2 characterized in that the predetermined pressure is a
3 pressure between 100 and 600 bars.

1 Claim 8 (original): An apparatus according to claim 7,
2 characterized in that the predetermined pressure is a
3 pressure between 200 and 600 bars.

1 Claim 9 (original): An apparatus according to claim 8,
2 characterized in that the predetermined pressure is a
3 pressure between 300 and 600 bars.

1 Claim 10 (original): An apparatus according to claim 9,
2 characterized in that the predetermined pressure is a
3 pressure between 400 and 600 bars.

Claims 11-12 (canceled)

1 Claim 13 (currently amended): An apparatus according to
2 claim ~~11~~-1, characterized in that the movable control pin
3 is situated in the channel, while the longitudinal
4 direction of the control pin is directed substantially
5 perpendicularly to the plane of the outflow opening, and
6 the control pin is laterally supported by a bearing, ~~such~~
7 ~~as~~ including O-rings.

1 Claim 14 (currently amended): An apparatus according to
2 claim ~~12~~-1, characterized in that the pressure regulating
3 mechanism comprises a piezo element for driving the control
4 pin.

1 Claim 15 (original): An apparatus according to claim 14,
2 characterized in that the apparatus is provided with a
3 thermal screening element for thermally screening said
4 piezo element from the material in the channel.

1 Claim 16 (previously presented): An apparatus according to
2 claim 1, characterized in that a diameter of the outflow
3 opening is in the interval of 20-100 μm .

1 Claim 17 (previously presented): An apparatus according to
2 claim 1, characterized in that the apparatus is provided
3 with a heating element, which may or may not be regulable,
4 for heating the material in the channel.

1 Claim 18 (original): An apparatus according to claim 17,
2 characterized in that the heating element is arranged for
3 bringing the material to a temperature which is in the
4 interval of 15-700° C.

1 Claim 19 (original): An apparatus according to claim 18,
2 characterized in that the heating element is arranged to
3 bring the material to a temperature which is in the
4 interval of 150-300° C.

1 Claim 20 (currently amended): A method for printing a fluid
2 material using a continuous jet printing technique, wherein
3 the material is passed under pressure from a reservoir
4 through a channel to at least one outflow opening of the
5 channel, after which the material is passed through the
6 outflow opening, characterized in that the pressure in at
7 least a part of the channel upstream of the outflow opening
8 is in the interval of 15-600 bars [approximately $15 \cdot 10^5$ to
9 $600 \cdot 10^5$ Pa];

10 wherein a pressure regulating mechanism comprises
11 a movable control pin, which control pin can be moved in a
12 longitudinal direction towards/away from the outflow
13 opening; and

14 wherein an end of the control pin can be placed
15 at a predetermined distance of 15-500 μm from the outflow
16 opening, for varying the pressure adjacent the outflow
17 opening by means of vibration of the control pin.

1 Claim 21 (currently amended): A method according to
2 claim ~~20~~22, characterized in that the material at the time
3 of flowing out through the outflow opening has a viscosity
4 which is in the interval of $150 \cdot 10^{-3}$ to $400 \cdot 10^{-3}$ Pa·s.

Claim 22 (canceled)

1 Claim 23 (new): An apparatus for printing a fluid material
2 by means of a continuous jet printing technique, comprising
3 a reservoir for storing the material, a channel connected
4 with the reservoir, which is provided with at least one
5 outflow opening from which, in use, flows a jet of the

6 material breaking up into drops, and a pressure regulating
7 mechanism for varying the pressure of the material upstream
8 of the outflow opening for the purpose of obtaining the jet
9 breaking up into drops, the apparatus being further
10 provided with pressure generating means for passing the
11 material under a predetermined pressure through the channel
12 in the direction of the outflow opening, characterized in
13 that the pressure generating means are arranged for
14 applying the predetermined pressure to the material in the
15 channel hydraulically and/or pneumatically; wherein the
16 apparatus is further provided with a plunger pump connected
17 to the gas bottle via a gas connection with a cock, for
18 pressurizing the gas bottle, and that the gas bottle is
19 connected to the reservoir and/or the channel via a cock.

1 Claim 24 (new): An apparatus according to claim 23,
2 characterized in that the gas source comprises a second gas
3 bottle coupled to the reservoir and/or the channel via a
4 gas connection with a cock.